

CLAIMS

1        1. A lateral flow immunoassay device for identifying the presence of tissue from  
2        a particular species of billfish in a test sample, the device comprising a substrate onto which a  
3        billfish specific antigen-containing sample has been immobilized.

1        2. The immunoassay device of claim 1, wherein the substrate comprises a  
2        nitrocellulose membrane.

1        3. The immunoassay device of claim 2, wherein the substrate comprises a  
2        plastic-backed nitrocellulose membrane.

1        4. The immunoassay device of claim 1, wherein the substrate has a first end and  
2        a second end, the first end having thereon the immobilized billfish-specific antigen-  
3        containing sample, and the second end being adapted to receive a solution comprising an  
4        antibody that specifically binds the billfish-specific antigen.

1        5. The immunoassay device of claim 4, wherein the solution further comprises at  
2        least a portion of the test sample.

1        6. The immunoassay device of claim 1, wherein the billfish-specific antigen is a  
2        billfish serum albumin.

1        7. The immunoassay device of claim 6, wherein the billfish serum albumin  
2        comprises sailfish serum albumin.

1           8.     The immunoassay device of claim 6, wherein the billfish serum albumin  
2     comprises blue marlin serum albumin.

1           9.     The immunoassay device of claim 6, wherein the billfish serum albumin  
2     comprises white marlin serum albumin.

1           10.    The immunoassay device of claim 4, wherein the solution is applied on the  
2     substrate.

1           11.    The immunoassay device of claim 10, wherein at least a portion of the  
2     antibody is specifically bound to the immobilized billfish specific antigen.

1           12.    The immunoassay device of claim 10, wherein the antibody is detectably  
2     labeled.

1           13.    The immunoassay device of claim 12, wherein the detectably labeled antibody  
2     is conjugated to a gold particle.

1           14.    The immunoassay device of claim 12, wherein the gold particle has a diameter  
2     of between 20-40 nm.

1           15.    The immunoassay device of claim 1, wherein a non-billfish specific antigen  
2     has been immobilized on the substrate.

1           16. A kit for identifying the presence of tissue from a particular species of billfish  
2       in a test sample, the kit comprising:  
3                 a lateral flow immunoassay device comprising a substrate onto which a  
4       billfish- specific antigen-containing sample has been immobilized; and  
5                 a solution comprising an antibody that specifically binds the billfish-specific  
6       antigen.

1           17. The kit of claim 16, wherein the billfish specific antigen is a billfish serum  
2       albumin.

1           18. The kit of claim 17, wherein the billfish serum albumin is selected from the  
2       group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin  
3       serum albumin.

1           19. The kit of claim 16, wherein the antibody is detectably labeled.

1           20. The kit of claim 19, wherein the detectably labeled antibody is conjugated to a  
2       gold particle.

1           21. The kit of claim 20, wherein the gold particle has a diameter of between 20-40  
2       nm.

1           22. The kit of claim 16, wherein a non-billfish specific antigen has been  
2       immobilized on the substrate.

1           23. A method for identifying the presence of tissue from a particular species of  
2       billfish in a test sample, the method comprising the steps of:

3                   (A) providing the test sample and a substrate onto which a billfish-specific  
4       antigen-containing sample has been immobilized;

5                   (B) preparing an antibody-test sample mixture by mixing the test sample  
6       with an antibody that specifically binds the billfish specific antigen; and

7                   (C) applying the antibody-test sample mixture to the substrate.

1           24. The method of claim 23, wherein the billfish-specific antigen is a billfish  
2       serum albumin.

2           25. The method of claim 24, wherein the billfish serum albumin is selected from  
3       the group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin  
4       serum albumin.

2           26. The method of claim 23, wherein the antibody is detectably labeled.

1           27. The method of claim 26, wherein the detectably labeled antibody is  
2       conjugated to a gold particle.

1           28. The method of claim 23, wherein a non-billfish specific antigen has been  
2       immobilized on the substrate.

1           29. A method for identifying the presence of tissue from a particular species of  
2       billfish in a test sample, the method comprising the steps of:  
3                   (A) providing the test sample and a substrate;  
4                   (B) immobilizing at least a portion of the test sample on the substrate;  
5                   (C) providing an antibody that specifically binds a billfish-specific antigen;  
6       and  
7                   (D) applying the antibody to the substrate.

1           30. The method of claim 29, wherein the billfish-specific antigen is a billfish  
2       serum albumin.

1           31. The method of claim 30, wherein the billfish serum albumin is selected from  
2       the group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin  
3       serum albumin.

1           32. The method of claim 29, wherein the antibody is detectably labeled.

1           33. The method of claim 32, wherein the detectably labeled antibody is  
2       conjugated to a gold particle.

1           34. The method of claim 29, wherein a non-billfish specific antigen has been  
2       immobilized on the substrate.